

TITLE

## OLEFIN POLYMERS AND PROCESSES THEREFOR

Abstract of the Disclosure

Disclosed herein are processes for polymerizing  
5 ethylene, acyclic olefins, and/or selected cyclic  
olefins, and optionally selected olefinic esters or  
carboxylic acids, and other monomers. The  
polymerizations are catalyzed by selected transition  
metal compounds, and sometimes other co-catalysts.  
10 Since some of the polymerizations exhibit some  
characteristics of living polymerizations, block  
copolymers can be readily made. Many of the polymers  
produced are often novel, particularly in regard to  
their microstructure, which gives some of them unusual  
15 properties. Numerous novel catalysts are disclosed, as  
well as some novel processes for making them. The  
polymers made are useful as elastomers, molding resins,  
in adhesives, etc. Also described herein is the  
synthesis of linear  $\alpha$ -olefins by the oligomerization of  
20 ethylene using as a catalyst system a combination a  
nickel compound having a selected  $\alpha$ -diimine ligand and  
a selected Lewis or Bronsted acid, or by contacting  
selected  $\alpha$ -diimine nickel complexes with ethylene.